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University of California College of Agriculture Agricultural Experiment Station Berkeley, California

SEASONAL LABOR NEEDS FOR CALIFORNIA CROPS

ALAMEDA COUNTY

Progress Report No. 1

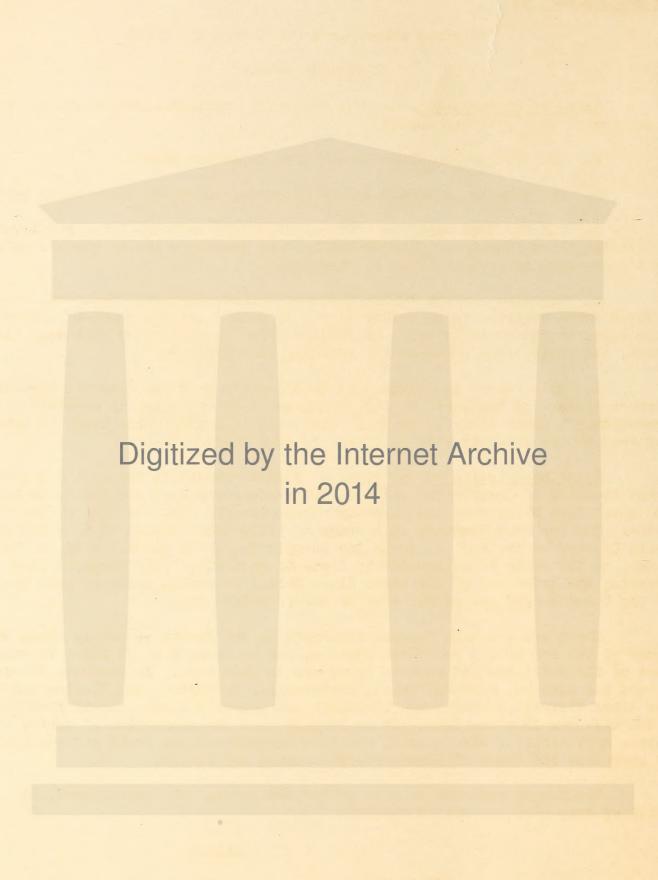
by

R. L. Adams

Preliminary -- Subject to Correction
October, 1936

Contribution from the Giannini Foundation of Agricultural Economics Mimeographed Report No. 53

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(Farm Labor Survey -- January-June, 1936)

Progress Report #1

Seasonal Labor Needs for California Crops

Alameda County

Scope of Presentation. -- The following considerations govern the presentation of this progress report:

- 1. The data are confined to the area indicated above.
- 2. The data are confined solely to crops, livestock needs being ignored.
- 3. The findings apply only to occasional or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.
- 4. The presentation includes the so-called migratory transient, or roving workers which comprise an important source of help needed in connection with certain tasks at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.
- 5. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area. -- Alameda County is one of the central coast counties of California, lying on the eastern shore of San Francisco Bay, and about five miles east and directly across the Bay from the city of San Francisco. The northern boundary is a range of hills which divide it from Contra Costa County, on the east it joins San Joaquin County in the hills of the Coast Range, on the south it is bounded by Santa Clara County, (the boundary line crossing the lower end of the Santa Clara Valley extending eastward into the hills of the Coast Range) and on the west by San Francisco Bay.

There are two main farming districts in the County — one is along the shore of the Bay in the southwest portion, and is about 4 by 24 miles in extent. Most of the vegetable and orchard crops are in this area. It includes the country around San Leandro, Hayward, Niles, Centerville, Irvington, and Mission San Jose. The other district includes the Livermore and Amador Valleys, and is from 3 to 5 miles wide and 15 miles long. It is largely used for production of barley and wheat, hay, alfalfa, wine grapes, and to a limited extent, fruit and vegetables. It surrounds the towns of Livermore, Pleasanton and Dublin.

The County contains an area of 468,480 acres. The latest available estimates of crop acreages are as follows:

	Acreage
*Field crops	64,570
Vegetable crops+	22,305
Orchard crops +	12,222
Total	99,097

^{*} Field crop acreage in 1934 from 1935 Census -- Preliminary Report.

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+ Vegetable acreage in 1934 based largely on data from Federal-State Crop Reporting Service, California Department of Agriculture, Sacramento -- "Acreage of Specified Vegetable Crops by Counties - 1934," C. M. Shiller, with some additions by Gordon Laing, Agricultural Commissioner, Alameda County.

* Orchard acreages are from Gordon Laing, Agricultural Commissioner of Alameda County, and represent conditions in 1935.

The farming district in the southwest portion along the Bay lies generally below the 100 footcontour, but the adjoining hills rising to heights of several hundred feet are cultivated for peas and other crops,

The Livermore and Amador valleys lie generally between 400 feet and 500 feet in elevation; while the surrounding hilly country is farmed to hay and grain to an elevation of 1,000 feetor more.

Several different soils are represented. The district along the Bay is mostly loam and clay loam with some areas of clay and adobe, and are mostly included in two main soil series. The soils of the Livermore and Amador valleys are more varied, and range from gravelly-sandy loams to clay loams and adobe, and represent four or five different series. The soils are mostly six feet or more in depth in the valleys and three feet or more on the hills.

<u>Crops. Acreages, and Production.--</u> The basis used in calculating occasional or seasonal need for labor in addition to that furnished by farm operators and regularly employed workers, appears in table 1.

TABLE 1

Basis for Calculating Seasonal Labor Requirements -- Alameda County

Crops	Acreage	Production
Field crops: *		
Sugar beets	3,326	41,460 tons
Hay, other than alfalfa		
Grain hay	17,404	20,222 tons
Wild hay	10,763	11,666 tons
Other hay	185	
Hay alfalfa	7,233	19,042 tons
Barley	16,511	243,979 bushels
Wheat	6,720	88,450 bushels
Oats	1,851	32,688 bushels
Corn	8	188 bushels
Potatoes	569	73,140 bushels
Vegetable crops: +		
Beans (string)	100	
Cabbage	100	
Cauliflower	150	505 000 swatss
	2,100	525,000 crates
Cucumbers, pickling Garlic	397	1,600 tons
	50	2,000 sacks
Lettuce	150	22,500 crates
Onions	20	4,000 sacks
Peas, canning	1,000	500,000,1
Peas, market	9,000	500,000 hampers
Rhubarb	1,479	370,000 boxes (20 lbs. each

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Crops	Acreage	Production
Vegetable crops (continued)		
Spinach	1,809	9,000 tons
Strawberries	250	
Tomatoes, canning	5,000	25,000 tons
Tomatoes, market	800	2,400 tons
Orchard crops: ‡		
Almends	200	
Apples	60	
Apricots	5,100	12,000 tens about 50 per
		cent of which were dried
Cherries	867	1,700 tons
Figs	17	
Grapes, wine varieties	3,390	3,400 tens
Peaches, free	90	
Pears, nearly all Bartlett	500	1,500 tons
Prunes	1,500	1,500 tons (dry weight)
Walnuts	436	250 tons
Currants	107	10,000 crates
Gooseberries	55	

^{*} Data on field crops from 1935 Census covering 1934 crop year.

Operations Requiring Seasonal Labor and Times of Need

Farm operations requiring the use of seasonal or occasional labor for the various crops raised in Alameda County are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops
Alameda County

Crop	Operation	Time of need
Field crops:		
	or seasonal labor is negligible.	
	ork done by regular employees.	
between April 15 a	and November 1 for occasional job	os, especially stacking.
	Baling - (see under hay)	
Grain		June-15 per cent
Barley)	Harvesting by combine (40	
Wheat)		August30 per cent
Oats)	workers)	September5 per cent
		Table continued on next page.)

[†] Data on vegetable acreage are from report by C. M. Shiller, Federal-State Crop Reporting Service, Sacramento, with some additions by Gordon Laing, Agricultural Commissioner, Alameda County.

Acreage in fruit crops is from Gordon Laing, Agricultural Commissioner,
Alameda County.

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Potatoes Picking up, sort- ing, sacking September50 per cent of acreage October50 per cent of acreage May 1-3166 per cent of acreage Hoeing+ May 1-3166 per cent of acreage June 1-1533 per cent of	Crop	Operation	Time of need
Mowing Raking Raking Raking April—10 per cent of acreage May—90 per cent of tonnage baled June—30 per cent of tonnage baled July—30 per cent of tonnage baled August—30 per cent of tonnage baled September—5 per cent of tonnage baled September—5 per cent of tonnage baled September—50 per cent of acreage October—50 per cent of acreage May 1-31—66 per cent of acreage May 1-31—66 per cent of acreage June 1-15—33 per cent of	Corn (acreage insignifi-		
Shocking May —90 per cent of acreage May Trimming May Baling * May5 per cent of tonnage baled June —30 per cent of tonnage baled July —30 per cent of tonnage baled August—30 per cent of tonnage baled September—5 per cent of tonnage baled September—5 per cent of tonnage baled September—50 per cent of acreage October —50 per cent of acreage October —50 per cent of acreage May 1-31—66 per cent of acreage Hoeing† May 1-31—66 per cent of acreage June 1-15—33 per cent of		Mowing	
Trimming Baling * May-5 per cent of tonnage baled June -30 per cent of tonnage baled July-30 per cent of tonnage baled August-30 per cent of tonnage baled August-30 per cent of tonnage baled September-5 per cent of tonnage baled September-5 per cent of tonnage baled September-50 per cent of acreage October-50 per cent of acreage May 1-31-66 per cent of acreage Hoeing† May 1-31-66 per cent of acreage June 1-15-33 per cent of		Raking	
Baling * May-5 per cent of tonnage baled June -30 per cent of tonnage baled July -30 per cent of tonnage baled August-30 per cent of tonnage baled September-5 per cent of careage October-50 per cent of acreage May 1-31-66 per cent of acreage Hoeing† May 1-31-66 per cent of acreage June 1-15-33 per cent of		Shocking	Мау
baled June30 per cent of tonnage baled July30 per cent of tonnage baled August 30 per cent of tonnage baled September 5 per cent of tonnage baled September 5 per cent of tonnage baled September 5 per cent of creage October 50 per cent of acreage October 50 per cent of acreage May 1-31 66 per cent of acreage Hoeing † May 1-31 66 per cent of acreage June 1-15 33 per cent of	Succession Communication	Trimming	May
June30 per cent of tonnage baled July30 per cent of tonnage baled August 30 per cent of tonnage baled September 5 per cent of tonnage baled September 5 per cent of tonnage baled September 5 per cent of acreage October 50 per cent of acreage May 1-31 66 per cent of acreage Hoeing † May 1-31 66 per cent of acreage June 1-15 33 per cent of		Baling *	
July—30 per cent of tonnage baled August—30 per cent of tonnage baled September—5 per cent of tonnage baled September—5 per cent of tonnage baled Potatoes Picking up, sort— ing, socking September—50 per cent of acreage October—50 per cent of acreage May 1-31—66 per cent of acreage May 1-31—66 per cent of acreage June 1-15—33 per cent of			June -30 per cent of tonnage
August—30 per cent of tonnage baled September—5 per cent of tonnage baled Potatoes Picking up, sort— ing, sacking September—50 per cent of acreage October—50 per cent of acreage May 1-31—66 per cent of acreage Hoeing† May 1-31—66 per cent of acreage June 1-15—33 per cent of			July -30 per cent of tonnage
Potatoes Picking up, sorting September 50 per cent of acreage October 50 per cent of acreage May 1-31 66 per cent of acreage Hoeing† May 1-31 66 per cent of acreage June 1-15 33 per cent of			August-30 per cent of tonnage
ing, socking October 50 per cent of acreage Sugar beets Thinning April 15-30-33½ per cent of acreage May 1-31-66 per cent of acreage Hoeing† May 1-31-66 per cent of acreage June 1-15-33 per cent of			September 5 per cent of ton-
Hoeing† May 1-31-66 per cent of acreage May 1-31-66 per cent of acreage June 1-15-33 per cent of	Potatoes		
May 1-31-66 per cent of acreage Hoeing† May 1-31-66 per cent of acreage June 1-15-33 per cent of	Sugar beets	Thinning	
June 1-15-33 per cent of			May 1-3166 per cent of
		Hoeing +	acrenge
gereage		History was	June 1-1533 per cent of acreage
November-each 22½ per cent		Topping and loading	
of crop December10 per cent of crop		o - Second depart	December 10 per cent of crop
Vegetable crops: Beans, Small acreage, handled by operators and regular employees.			

Cabbage, Small acreage, mostly handled by operators and regular employees.

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Table 2 continued.

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Crop	Operation	Time of need
Vegetable crops (cont'd) Cauliflower, practically all work done by regu- lar employees	Planting ‡	Aug8 per cent of acreage Sept50 per cent of acreage Oct30 per cent of acreage Nov6 per cent of acreage Dec6 per cent of acreage
	Cutting, trimming and packing	Nov8 per cent of acreage Dec28 per cent of acreage Jan28 per cent of acreage Feb22 per cent of acreage Mar3 per cent of acreage Apr10 per cent of acreage
Cucumbers (pickling)	Thinning and hoe- ing	May 15-31-50 per cent of screage June 1-15-50 per cent of screage
·	Picking	July 10-31-25 per cent of crop Aug. 1-31-50 per cent of crop Sept. 1-20-25 per cent of crop
Garlic	Planting #	Dec 50 per cent of acreage Jan 50 per cent of acreage
	Hoeing (twice)	Feb., Mar., Apr.—two-thirds of acreage each month
	Pull and throw in piles	July
	Clip roots, tops and put in sacks	July
Lettuce (acreage too small to be of much importance)	Thinning	February—20 per cent of acreage June, July—80 per cent of acreage
	Hoeing	March—20 per cent of acreage July, August—80 per cent of acreage
	Cutting	May-20 per cent of acreage Aug., Sept.,-80 per cent of acreege
Onions (acreage small) (of little importance	Hoeing	April
in labor demand)	Harvesting (pick up, cut off top, and sack)	October
Peas, market	Hoeing (very little done in Alameda County)	

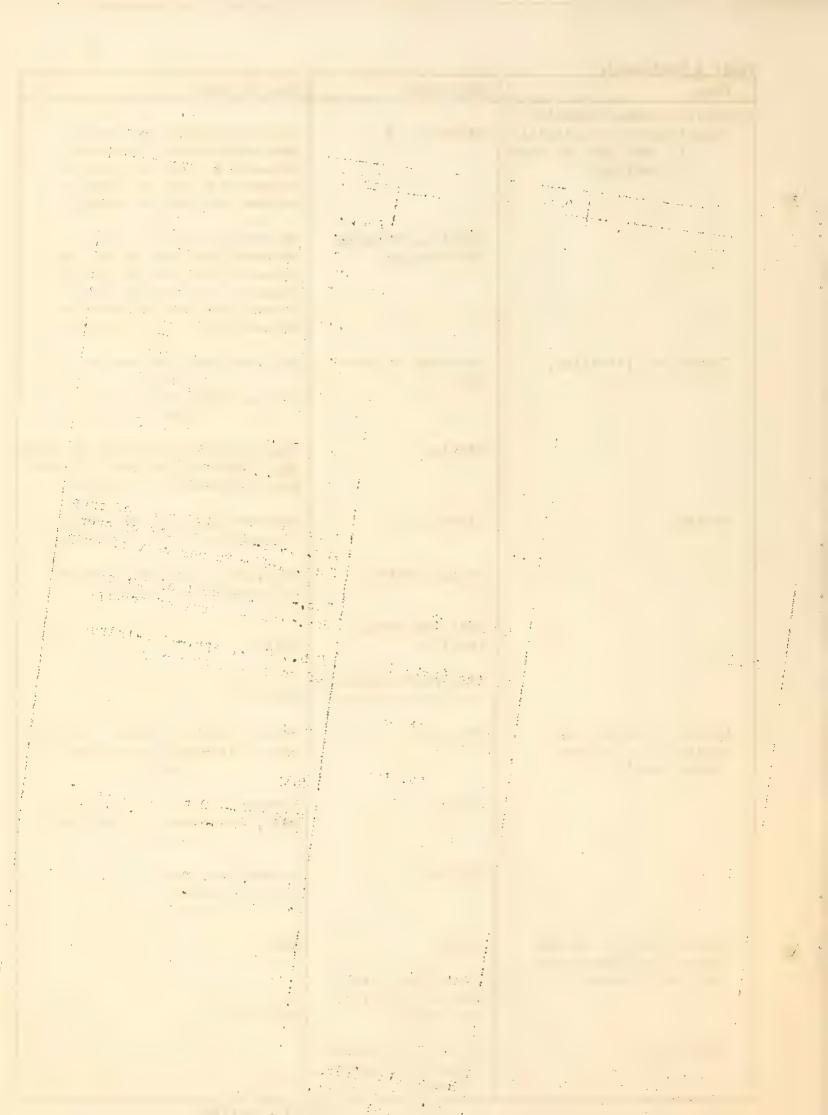


Table 2 continued.

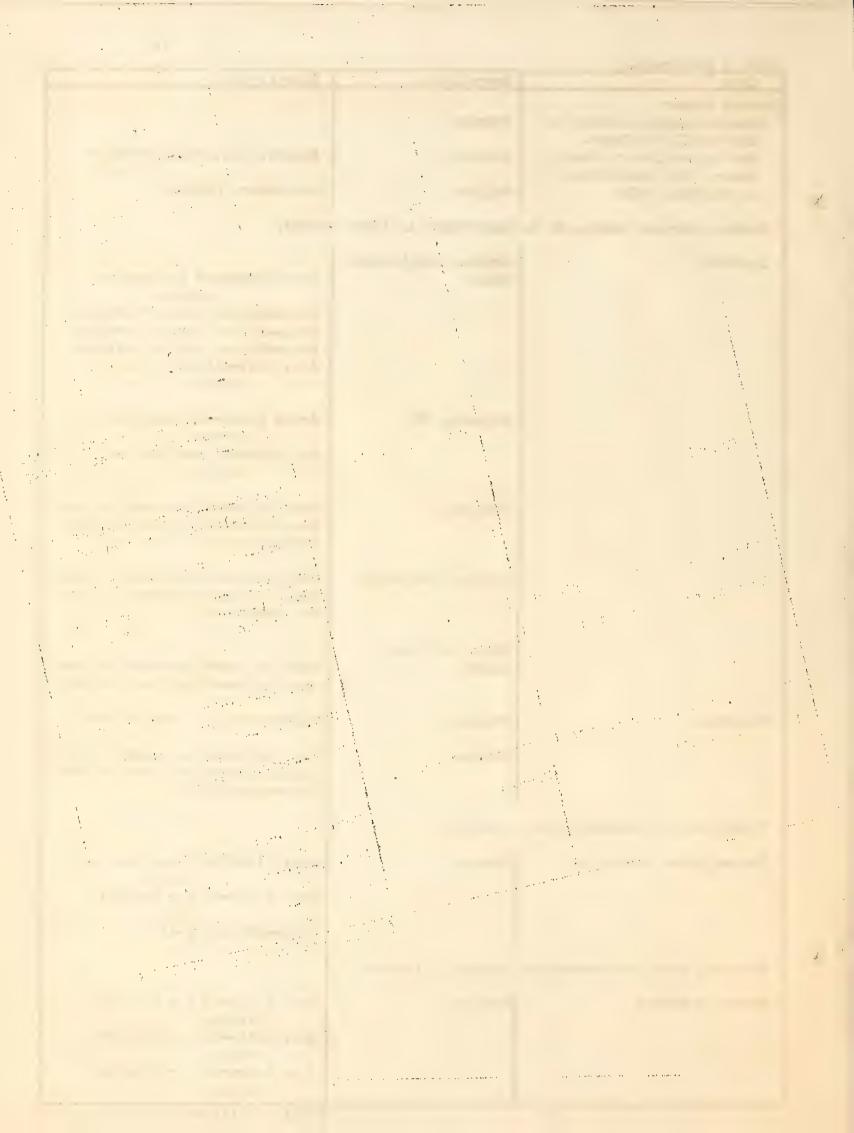
Crop	Operations	Time of need
Vegetable crops (cont'd) Peas, market	Picking	April 1 — June 15 Apr. — 50 per cent of crop May — 42 per cent of crop June 5 per cent of crop Sept. — 1 per cent of crop Oct. — 1 per cent of crop
Rhubarb	Picking	Mar. 1-31-50 per cent of crop Apr. 1-30-50 per cent of crop
	Washing and packing	Mar. 1-31-50 per cent of crop Apr. 1-30-50 per cent of crop Peak-Mar. 15 - Apr. 15
Spinach (canning)	Hoeing and thinning (on 10 per cent of acreage only)	February 15-25
	Picking	Mar. 15-3175 per cent of crop Apr. 1-525 per cent of crop PeakMar. 20-25
Strawberries	Picking	May and June
Tomatoes, canning and market	Transplanting in beds	March 1-31
	Transplanting to field	Apr. 15-30-50 per cent of acreage May 1-15-50 per cent of acreage
	Replanting misses	May 15-3175 per cent of acreage June 1-5-25 per cent of acreage
	Hoeing	May, June, July-33 per cent of acreage each Sept. 1-30-40 per cent of crop
	Picking, cannery	Oct. 1-3160 per cent of crop PeakOctober 1-10
	Picking, market	Aug. 25 - Nov. 1
		August 9 per cent of crop Sept. 10 per cent of crop Oct. 80 per cent of crop Nov. 1 per cent of crop
	Cutting vines 4	Nov. 1-30-75 per cent of acreage cut Dec. 1-31-25 per cent of acreage cut

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Table 2 continued	T	ab	le	2	CO	nt:	inu	ed	ı.
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Table 2 continued.	To	
Crop	Operations	Time of need
Orchard crops: Almonds, small acreage in many small holdings.	Pruning	
Mostly handled by family labor, with practically	Knocking	August, September, October
no seasonal help.	Hulling	September, October
Apples, acreage small, of no	importance in labor	demand.
Apricots	Pruning and burning brush	Sept. 15-30-5 per cent of acreage Oct10 per cent of acreage
		Nov35 per cent of acreage Dec35 per cent of acreage Jan. 1-1515 per cent of acreage
	Thinning 9	April 15-30-50 per cent of acreage May 1-15-50 per cent of acreage
	Picking	July 5-31-85 per cent of crop Aug. 1-5-15 per cent of crop Peak-July 20
	Cutting for drying	July 5-3185 per cent of crop Aug. 1-5-15 per cent of crop Peak -July 20
	Other dry yard labor	July 5-31-60 per cent of crop Aug. 1-15-40 per cent of crop
Cherries	Pruning	March-100 per cent of crop
	Picking	May 15-3125 per cent of crop June 1-30-75 per cent of crop Peak-June 5-20
Figs, acreage insignificant,	ignored.	
Grapes, wine varieties	Picking	Sept. 15-30-25 per cent of crop
		Oct. 1-31-75 per cent of crop
		Peak-0ctober 1-15
Peaches, free, no commercial	acreage. Ignored.	
Pears, Bartlett	Pruning	Nov. 1-30-25 per cent of acreage
		Dec. 1-31-25 per cent of acreage
		Jan. 1-3125 per cent of acreage
	*	the state of the s

(Table continued on next page)



Cable 2 continued. Crop	Operations	Time of need
Pears, Bartlett (cont'à)	Pruning (cont'd)	Feb. 1-2825 per cent of acreage
	Hoeing and suckering	Apr. 15-30-25 per cent of
		May 1-31-50 per cent of acreage
		June 1-15-25 per cent of acreage
	Picking	August 1-31
	Cutting for drying	August 1-31
	Other dry yard work	August 1-31
Prunes	Pruning	Nov.—25 per cent of acreage Dec.—25 per cent of acreage Jan.—25 per cent of acreage Feb.—25 per cent of acreage
	Picking up	Aug. 15-31-25 per cent of crop Sept. 1-30-75 per cent of crop
Walnuts	Knocking and pick- ing up	Sept. 15-30-20 per cent of crop Oct. 1-31-80 per cent of crop
	Hulling	Sept. 15-30-20 per cent of crop Oct. 1-31-80 per cent of crop
Currants	Pruning	Nov. 1-30, Dec. 1-31, Jan. 1-31 = 33 per cent of acreage
	Hoeing	February—100 per cent of acreage
	Picking	June 1-30-100 per cent of screage
Gooseberries, of small im	portance. Ignored.	

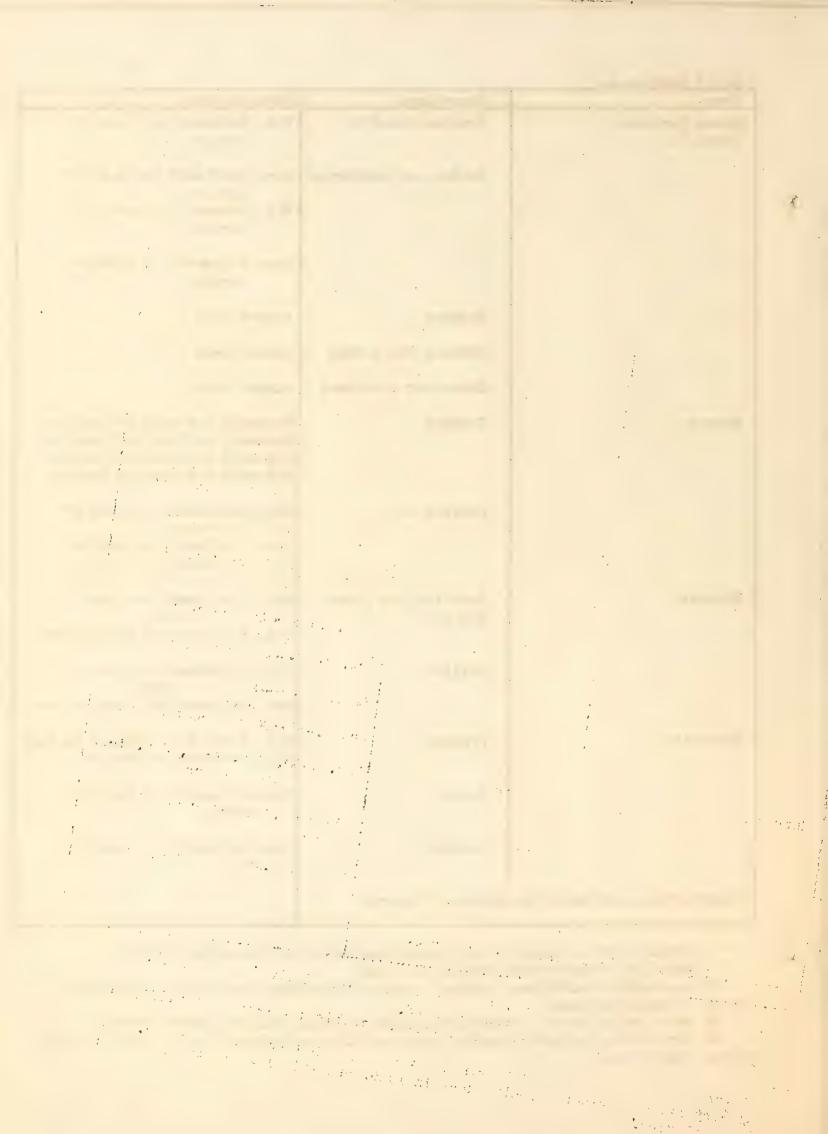
^{*} Probably 50 per cent of hay production is baled (including alfalfa).

† Only 1/2 of sugar beet acreage is hoed.

About 25 per cent of tomato vines cut by hand, balance disked under. Wery little apricot thinning done in 1935, and this was practically all by

[†] Two-thirds cauliflower acreage planted by machine; one-third cauliflower acreage planted by hand.

regular employees.



Findings of Seasonal Labor Needs .-- Details and summaries of seasonal labor requirements of Alameda County agriculture are presented in table 3. The "size of job" are figures drawn from table 1 in terms of either acreage or output in tons, crates, boxes, or whatever unit is commonly used. The "output per man-day" is an average figure for the entire acreage or output figured in packed crates, hampers, or boxes (in case of fruits and vegetables). If the work is of a nature that requires a crew different members of which perform different tasks (such as cutting, trimming, loading, and hauling cauliflower; trimming and crating celery, etc.); then the average shown is per man based on the entire crew. Length of day is 9 hours, November to February; 10 hours, March to October, unless otherwise stated. Wide variations in output occur between farm and farm, field and field, and season and scason, because of differences in soil types, climatic conditions, weeds, yields, and other factors influencing the amount of work that a laborer can perform in a given day. Moreover, the basis of output is a mature, experienced male worker, withcut reference to use of women, children, and more or less inexperienced help that is sometimes used in connection with certain of the tasks requiring use of seasonal workers. The column headed "available days" reflects (a) limitations set from the period within which the work must be performed because of the nature of the task, such as transplanting, thinning, weeding, and cutting, and (b) available days as determined by weather conditions, inclement weather reducing the number of days when a required task can be performed. The "required number of individuals" is given in terms of workers as noted above in connection with "output per man-day."

It is probable that the estimated number of workers required, as recorded in table 3, will often be too low, for the reason that "peaks" frequently occur, during which an unusually large proportion of the job is done in a very short period. This would naturally require a much greater number of workers than when the work is spread over a longer period, even though the total amount of labor (in mandays) remains the same.

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TABLE 3

Seasonal Labor Needs -- Alameda County -- by Months and Tasks

- 1	of workers	202	10	26	23	16	7	7	333 man-months	4 (for 10 days)	6 (for 10 days)	45 (for 10 days)	24	cv.	71	9	15	144 man-months	4 (for 8 days)	6 (for 5 days)	402*	268		273 (from 15th to 31st)		63	37	916 man-months	20†(from 20th to 30th)	on next page.)
Available	days	13	19	19	19	19	19	19	19	10	10	10	21	22	21	21	21	21	80	2	23	23	*1	12		23	23	23	10	continued
Required	man-days	3,825	191	200	42	1,500	125	140	6,323	33	09	450	200	42	1,500	125	321	3,031	33	30	9,250	6,166		3,275		1,450	867	21,071	200+	(Table
1	Output per man-day	O.2 acre	4 acres	0.25 acre	3 acres	0.25 acre	3 acres	0.25 acre		1 acre	0.5 acre	0.33 acre	0.25 acre	3 acres	0.25 acre	3 acres	0.33 acre		1 acre	1 acre	20 boxes	30 boxes		2 tons		5,000 plants	1 acre		7 acres	
	Size of task	765 acres	765 acres	125 acres	125 acres	375 acres	375 acres	35 acres		33 acres	30 acres	150 acres	125 acres	125 acres	375 acres	375 acres	107 acres		33 acres	30 acres	185,000 boxes	185,000 boxes		6,750 tons		7,250,000 plants	867 acres		1,400 acres	
	Crop and task	Apricots: Pruning	Disposing of brush	Pears: Pruning	Disposing of brush	Prunes: Pruning	Disposing of brush	Currants: Pruning	Totals	Garlic: Hoeing	Lettuce: Thinning	thinning	Pears: Pruning	Disposing of brush	Prunes: Pruning	Disposing of brush	Currants: Hoeing	Totals	Garlic: Hoeing		Rhubarb: Picking	Washing and packing	Spinach: Picking and	putting in crates	Tomatoes: Transplanting	to beds	Cherries: Pruning	Totals	Hay: Mowing	
	Month	January				•				February	·								March										April	

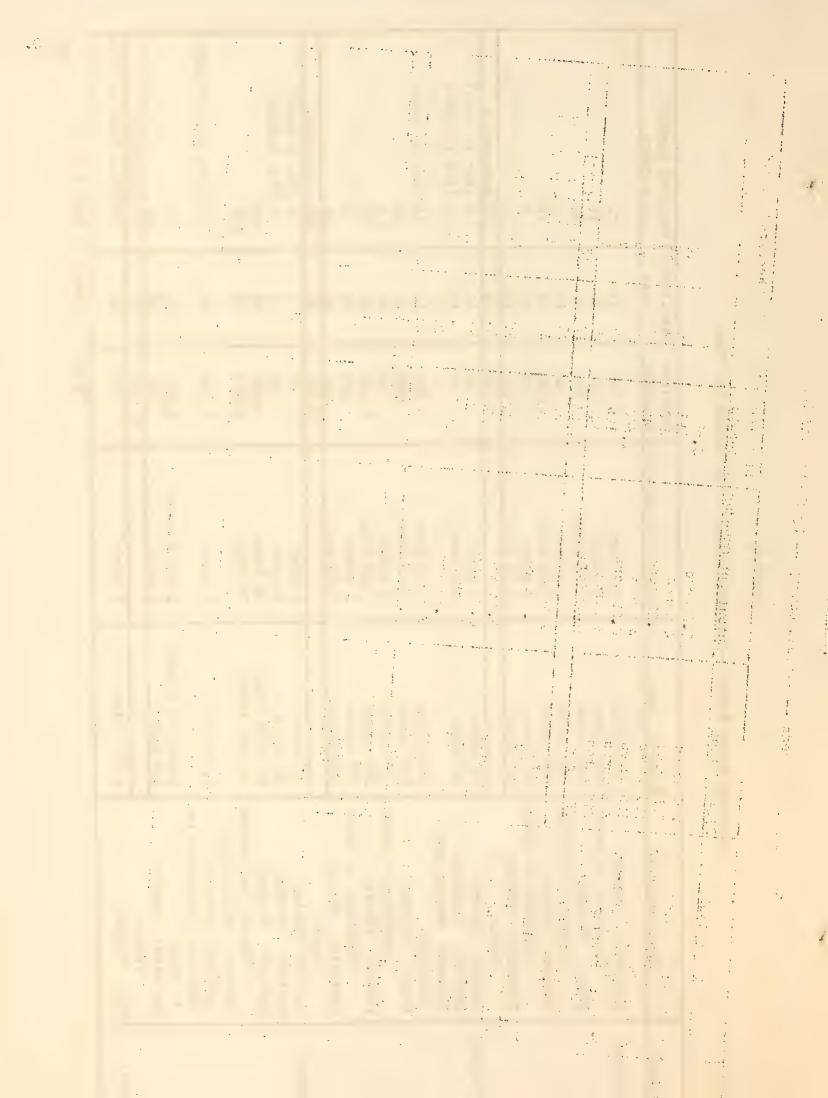
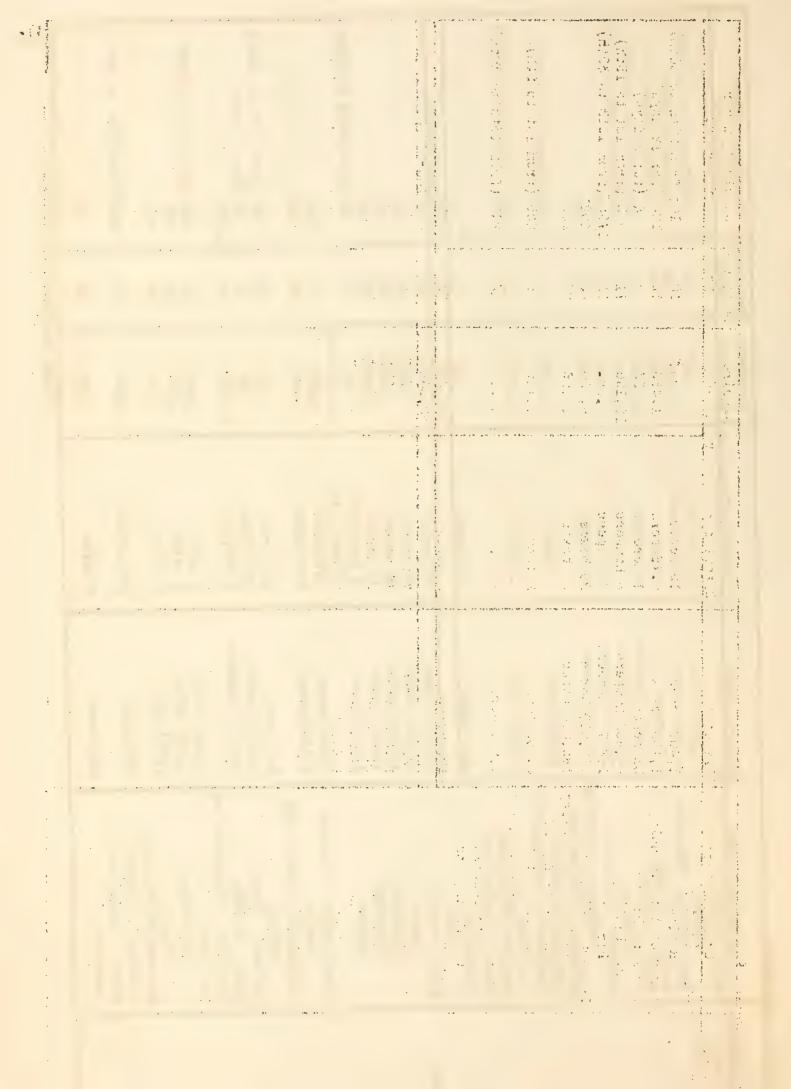
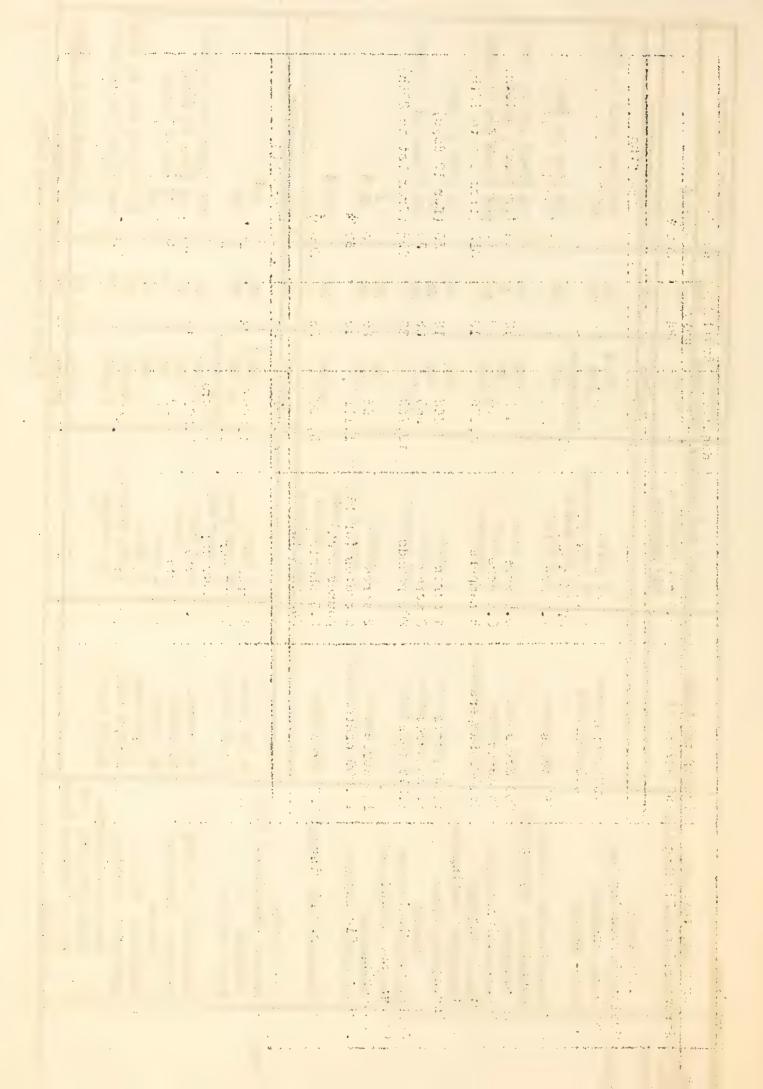


Table con	200	100 00 000	Outrait new men-dev	Required	Available	Required number	
Month	(contact)	- 4	Output per menden	mon-dey a	C C C		-
April	nay: (conc.)			4 40	0,	10+(20+ 20+ 20+2)	
(cont.)		L.400 Seres	To ecres	4	07.	(1 rom count to	
	Sugar beets: Thinning	I,100 acres	O.75 acre	1,400	75	LOI	
- true y	Garlic: Hoeing	53 acres	1 acre	33	00		
	Peas: Picking	81,250 hampers	8 hampers	10,156	17	1st to]	
	Picking	108,750 hampers	8 hampers	21,094	었	1,58 = (from 15th to 30th)	
Agenta d'un n rep	Rhubarb: Picking	185,000 boxes	20 boxes	9,250	23	402*	
	Weshing and packing		30 boxes	6,166	23	268	
	Spinach: Picking and						
ege- 1g pa-leg	putting in crates	2,250 tons	2 tons	1,125	വ	225 (from 1st to 5th)	
	Tomatoes: Transplanting						
ed volge of show	to field	2,900 acres	1 acre	2,900	22	242 (from 15th to 30th)	
	Apricots: F Thinning				grid-ravrilara appara	•	
	Pears: Hoeing and				ammyddig y fe		
		125 acres	S S S S S S S S S S S S S S S S S S S	63	63	м	
	Totals		i	52,546	23	285 man-months	
May	Hay: Mowing	12,600 acres	7 acres	1,800+	24		_
		12,600 acres	15 acres	840+	24	35	
	Shocking	14,000 acres	30 acres	466+	24	20	
	Trimming	14,000 acres	10 acres	1,400+	24	58	
	Baling	1,280 tons	5 tons per	256	9	43 (from 24th to 31st)	
			13 hour day	(of 13 hours)			
	Sugar beets: Thinning	2,200 acres	0.75 acre	2,933	24	122	
and Phipson	Hoeing	1,100 acres	2.5 acres	440	24	18	
	Cucumbers: Thinning and						
	Hoeing	200 acres	0.5 acre	400	12	34 (from 15th to 31st)	
-	Lettuce: Cutting	4,500 crates	30 crates	150	CH	10 (for 15 days)	
	Peas: Picking	210,000 hampers	8 hampers	26,250		1,095	
	Tomatoes: Transplanting	,	•				
	to field	2,900 acres	1 acre	2,900	2	242 (from 1st to 15th)	
	Replanting	4,350 acres	4 acres	1,088	24	45	
	Hoeing	1,930 acres	2 acres	965	24	40	-
	Apricots: # Thinning				-		
	Cherries: Picking	425 tons	200 pounds	4,250	12	354 (from 15th to 31st)	
	Pears: Hoeing and						
	suckering	250 acres	2 acres	125	24	5	
				- , -			7.

(Table continued on next page.)



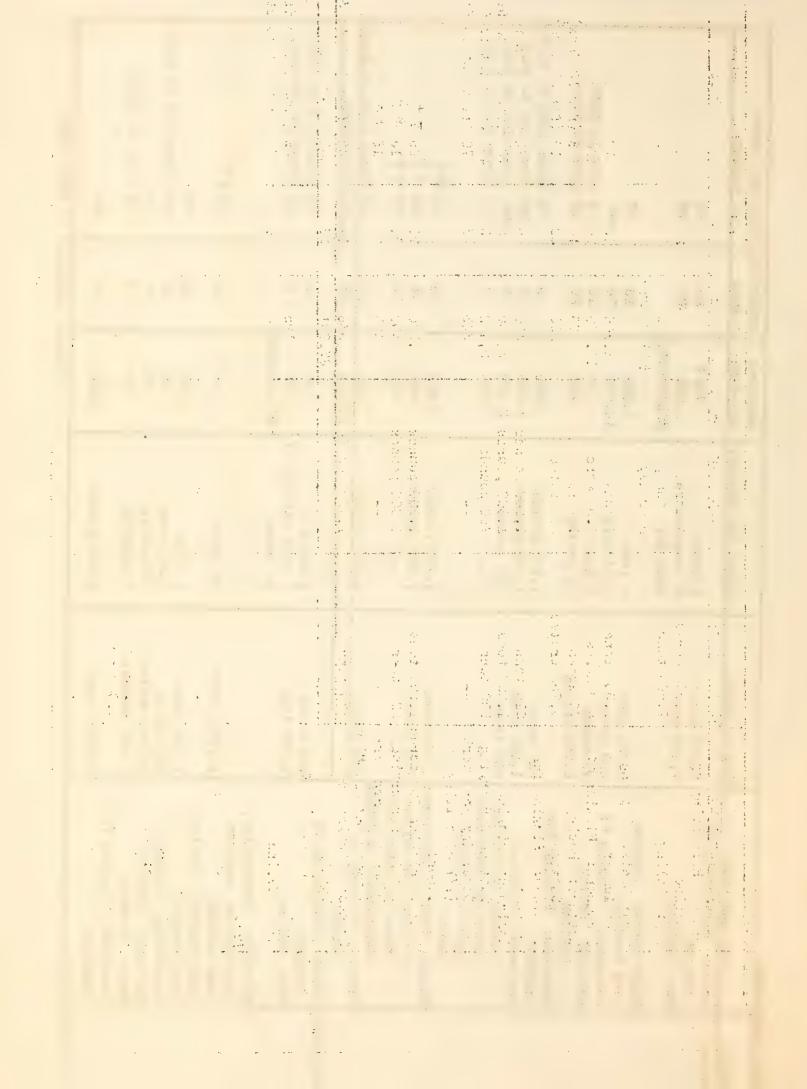
	Required number of workers		2,044 man-months	3211(from 15th to 30th)	62		18 (10r 12 days)	34 (from 1st to 15th)	(for 9 days)	_		30 (for 12 days)	39	638 (from 1st to 20th)			62 4		200 \$	200 m com 000 L	1,040 men-monens	α V	0.00		400 (from 1st to 20th)	_	5 (for 9 days)	39	816**(from 5th to 31st)	544 (from 5th to 31st)		78 (from 5th to 31st)	1,811 man-months	on next page.)
	Available days	24	24	12	25	C	7	12	o.	10		12	25	20		25	18		25	95	63	96	26		18	10	6	25	25	25		25	26	continued
	Required man-days	4,800	49,063	375 11	1,536	(of 13 hours)	022	400	06	3,125		362	965	12,750		63	1,111	•	2,000	25 007	186,62	1 250 1	1.536	(of 13 hours)	7,200	150	45	965	20,400	13,600		1,943	47,089	(Table
	Output per man-day	hests	1 1	4 acres		of 13 hours	Z.5 acres	0.5 acre	0.5 acre	8 hampers		4 acres	2 acres	200 pounds		acres	9 crates (of 18	pounds each)	2.5 chests =	GARAGE OF A		4 20 20 20 20 20 20 20 20 20 20 20 20 20		13 hour day	0.33 acre	0.5 acre	1 acre	2 acres	1,000 pounds	750 pounds		1		
	Size of task	250 acres		1,500 acres	7,680 tons	C L	550 acres	200 acres	45 acres	25,000 hampers		1,450 acres	1,530 acres	1,275 tons		125 acres	10,000 crates		250 acres	and an experience of the complete of the complete of the complete of the complete of the opposite of the complete of the compl		5.000 acres	7,680 tons		400 acres	75 acres	45 acres	1,930 acres	10,200 tons	5,100 tons		000 000		
tinued.	Crop and task	cking	Totals	Grain: Harvesting with combine	Hay: Baling		Sugar beets: Hoeing Cucumbers: Hoeing and		Lettuce: Thinning	Peas: Picking	Tomatoes: Replanting	missing vines	Hoeing	Cherries: Picking	Pears: Hoeing and	50	Currants: Picking		Strawberries: Picking	0 [a + c	TO COTES	combine	Hay: Baling)	Cucumbers: Picking	Lettuce: Thinning	Hoeing	Tomatoes: Hoeing	Apricots: Picking	Cutting for drying	Other dry yard work	1/7 of cutting labor	Totals	
Table continued.	Month	May (cont.)		June	54,00400	ri na tra pantan		and the second													T.1.7 #	ř.												



-		1										$\overline{}$										\neg															1
- 1	Required number of workers	1	53	59			72		8 (for 10 days)			(from 25th to	720 (from 1st to 5th)	(from 1st to	70 (from 1st to 5th)			95 = 7		18 ##		45 (from 15th to 31st)	1,042 man-months		1st to	43 (from 1st to 6th)			18		75	400 (from 1st to 20th)		51 (for 14 days)	t t	555	
	Available		26	26			98	26	10	20		വ	വ	വ	വ			26	26	26		12	26		Ŋ	9			S.		25	18	25	14	!	52	
	Required man-days		750	1,536	(of 13 hours)		1,866	12,000	75	225		360	3,600	2,400	343			2,500	450	450		536	27,091		125		(of 15 hours)		430		1,866	7,200	375	714		8,333	
	Outnut ner man-dav		acres	5 tons per 13	hour day		5 tons	0.33 acre	1 acre	30 crates	ap qualification	1,200 pounds	1,000 pounds	750 pounds	1			1,200 pounds	1,000 pounds			1,400 pounds			4 acres	5 tons per day of	15 hours		25 george		5 tons	0.33 acre	30 crates	7 hampers		2,400 pounds	
	200 00 00 00 00 00 00 00 00 00 00 00 00	1000	3,000 acres	7,680 tons			9,330 tons	400 acres	75 acres	6,750 crates		216 tons	1,800 tons	900 tons	* *			1,500 tons		i		375 tons			500 acres	1,280 tons			110.750 sacks		9,330 tons	400 acres	11,250 crates	5,000 hampers	4	10,000 tons	
inued.	S contraction of the contraction	g by		Hay: Baling		Sugar beets: Topping	and loading	Cucumbers: Picking + +	Lettuce: Hoeing	Cutting	Tomatoes: Picking for	market	Apricots: Picking	Cutting for drying	Other dry yard work	(1/7 of cutting	labor)	Pears: Picking 500 acres		Other dry yard work	(Same a mount as cutting)	Prunes: Picking up	Totals	Grain: Harvesting by	combine	Hay: Baling	D	niching in coating	and sacking	Sugar beets: Topping		Cucumbers: Picking	Lettuce: Cutting	Peas: Picking	Tomatoes: Picking for	cannery	
Table continued.	M + 17	August		*******					, 10, 10	Table 1 - Appl Table 1									-			go dervisore	*****	September Grain:													

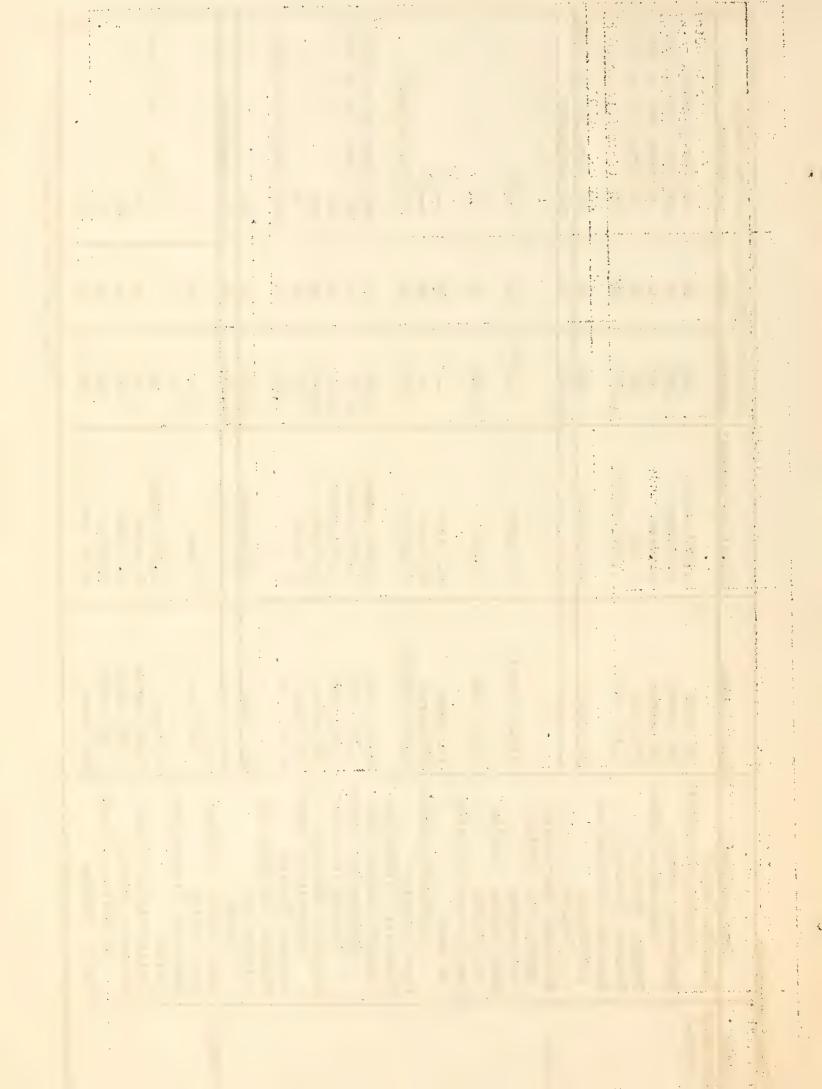
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13.



	Required number of workers	06 3)	104 (from 15th to 30th)	(from 15th to	71 (from 15th to 30th)	64	42 (from :5th to 30th)	man-months		18	75		0	861	51 (for 14 days)		(from 1st to 10th)	279 (from 10th to 31st)	128	102		128 (from 1st to 25th)	08	1.038 man-months	<u>م</u>		20 (first 2 or 3 days)	6	372		14.
	Available	6	7 2	12	75	25	, co	25		S S	25		25	123	77		10	20	ເດ	ro ro	ಬ	000	22	203	2.4		cý.	24	24	24	24
	Required man-days		1.250	63	850	1,607	200	23,969		430	1,866		i i	ł i	714		916,9	5,583	3,200	036,8		2,550	2,000	25,936	1.836		40	210	8,925	446	200
~	Output per man-dav		1,200 pounds	4 acres	1 ton	1,400 pounds	200 pounds	2 1		25 sacks	5 tons		0.5 acre	2 seres	7 hampers		2,400 pounds		1,200 pounds	0.2 acre		I ton	200 pounds		5 tons		1,200 pounds	5 acres		SCY.	0.25 acre
	Size of task		250 acres	250 acres	850 tons	1,125 tons	50 +000			21,500 sacks	9,330 tons		160 acres	470 acres	5,000 hampers		8,300 tons	6,700 tons	1,920 tons	510 acres	510 acres	2,550 tons	200 tons		9.330 tons		24 tons	1,050 acres	1,785 acres	1,785 acres	125 acres
tinued.	Crop and task	(cont.)	Apricots: Pruning	Disposing of brush	Grapes: Picking	Prunes: Picking up	Walnuts: Knocking and	Totals	Potatoes: Harvesting, picking up, sorting,		Sugar beets: Topping and loading	Cauliflower: Planting	by hand	Planting by machine		Tomatoes: Picking for	cannery (during peak)	Picking for cannery	Picking for market	Apricots: Pruning		Welmite: Knocking and		Totals	Sugar beets: Topping and loading	Tomatoes: Ficking for	market	Cutting vines by hand	Apricots: Pruning	U) H	Fears: Fruning
Table continued	Month	September	(cour.)	et la compa			****		October																November						

(Table continued on next page.)



. Table continued	ontinued					
				Required	Available	Required number
Month	Grop and task	Size of task	Output per man-day	man-days	days	of workers
November	Pears (cont.)					
(cont.)	Disposing of brush	125 acres	3 acres	42	24	લ્ય
	Prunes: Pruning	350 acres	0.25 acre	1,400	24	58
	Disposing of brush	350 acres	3 acres	117	24	ഹ
	Currants: Pruning	35 acres	0.25 acre	140	24	9
	Totals			13,686	24	.570 man-months
December	Sugar beets: Topping					
	and loading	4,150 tons	5 tons	830	10	83 (from 1st to 10th)
	Tomatoes: Cutting					
	vines by hand	350 acres	5 acres	70	7 2	10 (for 7 days)
diam-randhi	Apricots: Pruning	1,785 acres	0.2 acre	8,925	19	470
And had	Disposing of brush	1,785 acres	4 acres	446	5	23
n=+	Pears: Pruning	125 acres	0.25 acre	200	19	26
	Disposing of brush	125 acres	5 acres	42	19	W
	Prunes: Pruning	350 acres	0.25 acre	1,400	19	72
	Disposing of brush	350 acres	3 acres	117	19	9
	Currents: Pruning	35 acres	0.25 acre	140	19	8
	م اهارا			19 440	10	ASA mon months

* Reports indicate there was a demand for about 1,000 workers for harvesting rhubarb at the peak in 1935, including washing and packing.

Figures are for seasonal + Probably 50 per cent of haying work, except baling, is done by regular employees. workers.

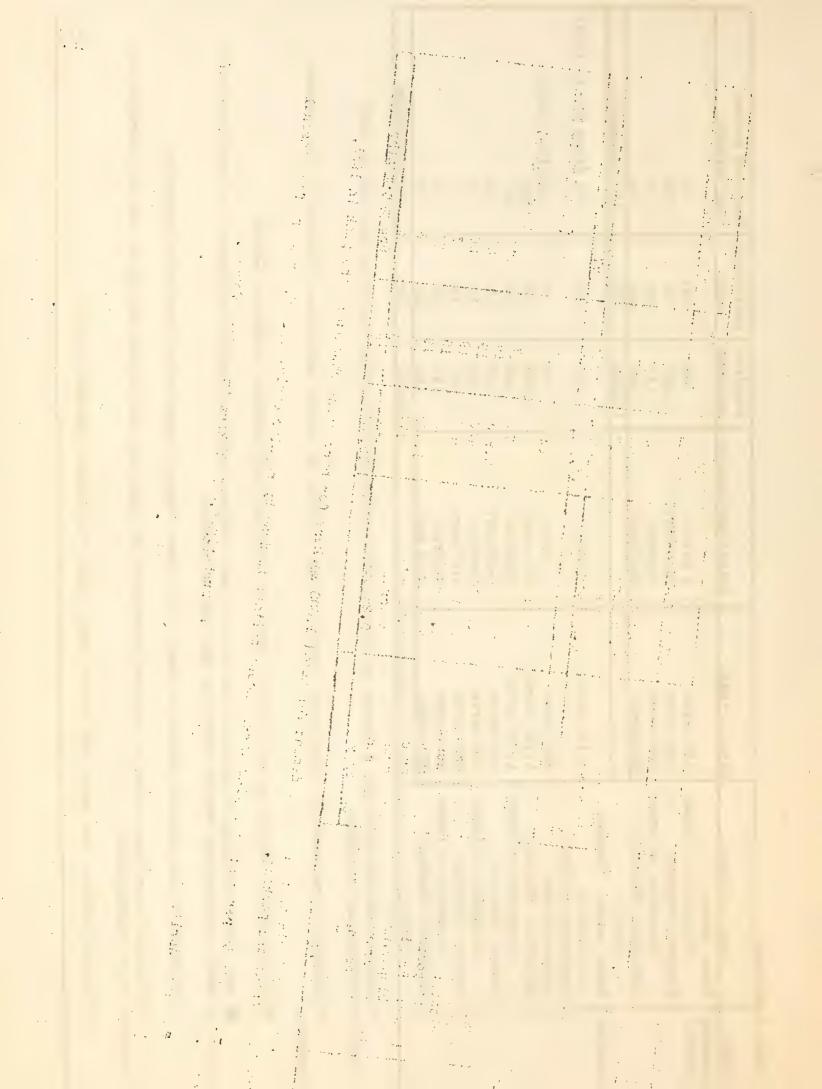
* In late April, at peak of pea picking, there are probably 3,000 pickers in Alameda County.

On years when set of * Very little thinning of apricots done in 1935, and this was mostly by regular employees. fruit is heavy, thinning may require almost as many men as picking.

§ Estimated at one seasonal worker for each 1 1/3 acres picking strawberries a continuous operation.

| Probably 60 per cent of men on combined harvesters are operators and regular employees, and are therefore not included in the figure given.

A Reports indicate that about 200 workers were needed for picking currants in 1935.



Footnotes continued.

** There were probably 1,500 or 2,000 apricot pickers employed in 1935 at the peak.

TTCucumber picking is a continuous operation -- the whole patch being picked over every 2 or 3 days.

† The number of workers picking and drying pears may have been considerably higher at peak times.

& Practically all work on cauliflower is done by regular employees.

About 50 per cent or more of potato harvesting is done by regular employees, who are not included in the figure given.

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